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 Nafion<sup>®</sup>; PEM fuel cell; High temperature; Electrode (Song, Y. (154) 138)

NaOH  
 Double-phase electrolyte (DPE); Fuel cell; NiAl; Enhanced output power (Hu, J. (154) 106)

Neural network  
 Neural network; Artificial intelligence; Fuel cell (Ogaji, S.O.T. (154) 192)

NiAl  
 Double-phase electrolyte (DPE); Fuel cell; NaOH; Enhanced output power (Hu, J. (154) 106)

Nickel metal hydride  
 Alkaline battery; Hybrid battery; Battery management; Battery monitoring; Bipolar battery (Markolf, R. (154) 539)

Nickel-zeolite  
 Nickel-zeolite; Impregnated silicalite-1; Electro-catalyst; Methanol oxidation; Alkaline solution (Abdel Rahim, M.A. (154) 59)

Nonlinear systems  
 Hammerstein systems; Parameter estimation; Solid oxide fuel cells; System identification (Jurado, F. (154) 145)

n-Type  
 SOFC; Interconnection; Bi-layer; p-Type (Huang, W. (154) 180)

Numerical analysis  
 PEFC; Current density distribution; Gas flow rate distribution; Separator (Inoue, G. (154) 18)

Numerical analysis  
 PEFC; Current density distribution; Relative humidity distribution; Membrane; Gas diffusion layer (Inoue, G. (154) 8)

Oil  
 Oil; Hydrogen; Fuel cells; Cost; Reliability; European union research (Zegers, P. (154) 497)

*o*-LiMnO<sub>2</sub> cathode  
 $\text{o-LiMnO}_2$  cathode; Li and F additions; Elevated-temperature cycling; Lithium-ion batteries; Capacity fading; Rate capability (Kim, T.-J. (154) 268)

On-board hydrogen production  
 Gasoline fuel processor; Automotive; Polymer electrolyte membrane fuel cell; Response time; Battery size (Mitchell, W. (154) 489)

Organic waste  
 Biomass; Biofuels; Fuel cells; Reformers (Gair, S. (154) 472)

Overcharge  
 Lithium cell; Safety; Electrolyte (Watanabe, Y. (154) 246)

Oxygen deficiency  
 Oxygen deficiency; Spinel; 3.2 V plateau; Structure around deficiency (Yoshio, M. (154) 273)

Oxygen reduction  
PEM fuel cells; Ammonia poisoning; Membrane conductivity; Hydrogen oxidation (Halseid, R. (154) 343)

Oxygen reduction catalysts  
Proton exchange membrane fuel cell (Sari Ozenler, S. (154) 364)

Parallel serpentine channels  
Water management; Proton exchange membrane; Pressure drop; Air–water behaviour; CFD modeling (Jiao, K. (154) 124)

Parameter estimation  
Hammerstein systems; Nonlinear systems; Solid oxide fuel cells; System identification (Jurado, F. (154) 145)

Passive  
Direct fuel cell; Architecture; Bi-cell; Flow field; MEA morphology (Qian, W. (154) 202)

PEFC  
PEFC; Numerical analysis; Current density distribution; Gas flow rate distribution; Separator (Inoue, G. (154) 18)

PEFC  
PEFC; Numerical analysis; Current density distribution; Relative humidity distribution; Membrane; Gas diffusion layer (Inoue, G. (154) 8)

PEFC  
PEFC; PEMFC; Fuel cell; Power train; Dynamic operation; Air supply (Philipps, F. (154) 412)

PEM  
PEM; Fuel cell; Stack; Impedance; EIS (Hakenjos, A. (154) 360)

PEM fuel cell  
Fuel reforming; Hydrogen production (Ersoz, A. (154) 67)

PEM fuel cell  
Nafion®; High temperature; Electrode (Song, Y. (154) 138)

PEM fuel cell  
PEM fuel cell; Dynamic modelling; Hardware in the loop; Test benches; Simulation (Lemeš, Z. (154) 386)

PEM fuel cell  
PEM fuel cell; Gas diffusion layer; Two-phase flow; Visualization; Microscale; Hydrophobic porous media; Fibrous media (Litster, S. (154) 95)

PEM fuel cells  
Diesel fuel processor; Autothermal reforming; Steam reforming; APU (Cutillo, A. (154) 379)

PEM fuel cells  
PEM fuel cells; Ammonia poisoning; Membrane conductivity; Hydrogen oxidation; Oxygen reduction (Halseid, R. (154) 343)

PEMFC  
PEFC; Fuel cell; Power train; Dynamic operation; Air supply (Philipps, F. (154) 412)

PEMFC  
PEMFC; Cold start; Portable fuel cells; Statistical analysis; Degradation (Oszcipok, M. (154) 404)

PEMFC  
PEMFC; Free-breathing; Freezing; Cold-start; Planar cell (Hottinen, T. (154) 86)

Photovoltaic panel  
Photovoltaic panel; *I*–*V* characteristic; Linear MOSFET; Maximum power point (Kuai, Y. (154) 308)

Planar cell  
PEMFC; Free-breathing; Freezing; Cold-start (Hottinen, T. (154) 86)

Planar PEMFC  
Air-breathing PEMFC; Water management; Hydrophobic and hydrophilic diffusion layer; Geometry variation; Printed circuit board (PCB) (Schmitz, A. (154) 437)

Plastic crystals  
Pyrazolium imide; Solid electrolytes; Ionic liquids; Lithium batteries (Abu-Lebdeh, Y. (154) 255)

Polarization curve prediction  
Micro single-chamber intermediate temperature solid oxide fuel cell; Computer simulation; Macro modelling (Chung, C.-Y. (154) 35)

Polyaniline  
Polyaniline; Carbon fiber; DMcT; Composites; Charge–discharge tests (Canobre, S.C. (154) 281)

Polymer electrolyte fuel cell  
Polymer electrolyte fuel cell; Current density distribution; In situ measurement (Ghosh, P.C. (154) 184)

Polymer electrolyte fuel cell  
Polymer electrolyte fuel cell; Current distribution; Lateral currents; Finite element modelling; Measurement uncertainty (Eckl, R. (154) 171)

Polymer electrolyte fuel cell  
Polymer electrolyte fuel cell; H<sub>2</sub>/CO<sub>2</sub> oxidation; Air bleed; Catalyst poisoning; Temperature effects; Model studies (Behm, R.J. (154) 327)

Polymer electrolyte membrane fuel cell  
Gasoline fuel processor; On-board hydrogen production; Automotive; Response time; Battery size (Mitchell, W. (154) 489)

Polymer Li-ion battery  
Lithium bis(oxalate)borate; Microporous gel electrolyte; Gel polymer electrolyte; High temperature performance (Zhang, S.S. (154) 276)

Porous silicon  
Miniature fuel cell; Membrane; Chemical grafting; Nafion®; Integration (Pichonat, T. (154) 198)

Portable fuel cells  
PEMFC; Cold start; Statistical analysis; Degradation (Oszcipok, M. (154) 404)

Power train  
PEFC; PEMFC; Fuel cell; Dynamic operation; Air supply (Philipps, F. (154) 412)

Pressure drop  
Water management; Proton exchange membrane; Parallel serpentine channels; Air–water behaviour; CFD modeling (Jiao, K. (154) 124)

Printed circuit board (PCB)  
Air-breathing PEMFC; Water management; Planar PEMFC; Hydrophobic and hydrophilic diffusion layer; Geometry variation (Schmitz, A. (154) 437)

Product distribution  
Ethanol oxidation; Pt/Vulcan; PtRu/Vulcan; Pt<sub>3</sub>Sn/Vulcan; DEMS (Wang, H. (154) 351)

Propylene carbonate  
Electrochemical double-layer capacitor; Impedance; Activated carbon; Arrhenius (Kötz, R. (154) 550)

Proton exchange membrane  
Fuel cells; PVDF; SEBS; Melt blending; Compatibilization (Mokrini, A. (154) 51)

Proton exchange membrane  
Water management; Pressure drop; Parallel serpentine channels; Air–water behaviour; CFD modeling (Jiao, K. (154) 124)

Proton exchange membrane fuel cell  
Proton exchange membrane fuel cell; Oxygen reduction catalysts (Sari Ozenler, S. (154) 364)

Prototyping  
Fuel cell systems; Simulation; Control; Rapid; Air supply; Fuel processing (Pischinger, S. (154) 420)

Pt/Vulcan  
Ethanol oxidation; PtRu/Vulcan; Pt<sub>3</sub>Sn/Vulcan; DEMS; Product distribution (Wang, H. (154) 351)

Pt<sub>3</sub>Sn/Vulcan  
Ethanol oxidation; Pt/Vulcan; PtRu/Vulcan; DEMS; Product distribution (Wang, H. (154) 351)

PtRu/Vulcan  
Ethanol oxidation; Pt/Vulcan; Pt<sub>3</sub>Sn/Vulcan; DEMS; Product distribution (Wang, H. (154) 351)

p-Type  
SOFC; Interconnection; Bi-layer; n-Type (Huang, W. (154) 180)

PVDF  
Fuel cells; Proton exchange membrane; SEBS; Melt blending; Compatibilization (Mokrini, A. (154) 51)

Pyrazolium imide  
Pyrazolium imide; Plastic crystals; Solid electrolytes; Ionic liquids; Lithium batteries (Abu-Lebdeh, Y. (154) 255)

Rapid  
Fuel cell systems; Simulation; Control; Prototyping; Air supply; Fuel processing (Pischinger, S. (154) 420)

Rate  
Anode; Li-ion batteries;  $\text{Li}_4\text{Ti}_5\text{O}_{12}$ ; Conductivity (Wolfenstine, J. (154) 287)

Rate capability  
 $\text{o-LiMnO}_2$  cathode; Li and F additions; Elevated-temperature cycling; Lithium-ion batteries; Capacity fading (Kim, T.-J. (154) 268)

Rechargeable bipolar battery  
Rechargeable bipolar battery; Zn-polyaniline; Carbon doped polyethylene (CDPE); Battery available capacity (BAC); ANN modeling; Simultaneous prediction (Karami, H. (154) 298)

Recirculation  
Gasoline reforming; Efficiency; System configuration (Schäfer, J. (154) 428)

Reduced model  
DMFC; System analysis; Transfer function; Transient response; Dynamic operation (Krewer, U. (154) 153)

Reformer  
Fuel processor; Fast start; Hydrogen; Gasoline; Automotive fuel cell (Ahmed, S. (154) 214)

Reformers  
Biomass; Biofuels; Organic waste; Fuel cells (Gair, S. (154) 472)

Relative humidity distribution  
PEFC; Numerical analysis; Current density distribution; Membrane; Gas diffusion layer (Inoue, G. (154) 8)

Reliability  
Oil; Hydrogen; Fuel cells; Cost; European union research (Zegers, P. (154) 497)

Renewable energies  
Renewable energies; Thermal behaviour; Storage technologies (Perrin, M. (154) 545)

Response time  
Gasoline fuel processor; On-board hydrogen production; Automotive; Polymer electrolyte membrane fuel cell; Battery size (Mitchell, W. (154) 489)

Safety  
Lithium cell; Overcharge; Electrolyte (Watanabe, Y. (154) 246)

SEBS  
Fuel cells; Proton exchange membrane; PVDF; Melt blending; Compatibilization (Mokrini, A. (154) 51)

Selfdischarge  
Ultracapacitors; Ultracap modules; Temperature characteristics; Frequency characteristics; Cell voltage balancing (Michel, H. (154) 556)

Separator  
PEFC; Numerical analysis; Current density distribution; Gas flow rate distribution (Inoue, G. (154) 18)

Simulation  
Fuel cell systems; Control; Rapid; Prototyping; Air supply; Fuel processing (Pischinger, S. (154) 420)

Simulation  
PEM fuel cell; Dynamic modelling; Hardware in the loop; Test benches (Lemeš, Z. (154) 386)

Simultaneous prediction  
Rechargeable bipolar battery; Zn-polyaniline; Carbon doped polyethylene (CDPE); Battery available capacity (BAC); ANN modeling (Karami, H. (154) 298)

SOFC  
APU; Diesel reformer (Lawrence, J. (154) 479)

SOFC  
SOFC; Interconnection; Bi-layer; p-Type; n-Type (Huang, W. (154) 180)

SOFC  
SOFC; Thermal management; Start-up (Apfel, H. (154) 370)

SOFC stack  
SOFC stack; Auxiliary power unit; Diesel reformate (Stelter, M. (154) 448)

Sol-gel synthesis  
Li ion batteries; Cathode materials; Electrochemical properties (Majumder, S.B. (154) 262)

Solid electrolyte  
Solid electrolyte; Ceria; Co-doping; Microstructure; Impedance spectroscopy (Tadokoro, S.K. (154) 1)

Solid electrolytes  
Pyrazolium imide; Plastic crystals; Ionic liquids; Lithium batteries (Abu-Lebdeh, Y. (154) 255)

Solid oxide fuel cells  
Hammerstein systems; Nonlinear systems; Parameter estimation; System identification (Jurado, F. (154) 145)

Solid oxide fuel cells  
Solid oxide fuel cells; Dynamic behaviour; Cathode activation; Thermal cycling; Degradation (Molinelli, M. (154) 394)

Spinel  
Oxygen deficiency; 3.2 V plateau; Structure around deficiency (Yoshio, M. (154) 273)

Spinel-type  
Lithium-ion batteries;  $\text{LiAl}_{0.1}\text{Mn}_{1.9}\text{O}_4$ ; Microwave (Bao, S.-J. (154) 239)

Stack  
PEM; Fuel cell; Impedance; EIS (Hakenjos, A. (154) 360)

Start-up  
SOFC; Thermal management (Apfel, H. (154) 370)

State of charge  
Battery dynamic; Battery impedance; State of health (Jossen, A. (154) 530)

State of health  
Battery dynamic; Battery impedance; State of charge (Jossen, A. (154) 530)

Statistical analysis  
PEMFC; Cold start; Portable fuel cells; Degradation (Oscipok, M. (154) 404)

Steam reforming  
Diesel fuel processor; Autothermal reforming; PEM fuel cells; APU (Cutillo, A. (154) 379)

Storage technologies  
Renewable energies; Thermal behaviour (Perrin, M. (154) 545)

Structure around deficiency  
Oxygen deficiency; Spinel; 3.2 V plateau (Yoshio, M. (154) 273)

Structure characteristics  
Structure characteristics; High-rate dischargeability; Low-temperature dischargeability; Exchange current density; Hydrogen diffusion coefficient (Zhang, X. (154) 290)

Sulfur poisoning  
Hydrogen; Autothermal reforming; Fuel processing; Diesel reforming; Catalyst (Cheekatamarla, P.K. (154) 223)

Surface area  
Electrochemical capacitor; Activated carbon; Microporosity; Surface oxygen; Calorimetry (Centeno, T.A. (154) 314)

Surface oxygen  
Electrochemical capacitor; Activated carbon; Microporosity; Surface area; Calorimetry (Centeno, T.A. (154) 314)

System analysis  
DMFC; Transfer function; Reduced model; Transient response; Dynamic operation (Krewer, U. (154) 153)

System configuration  
Gasoline reforming; Efficiency; Recirculation (Schäfer, J. (154) 428)

System identification  
Hammerstein systems; Nonlinear systems; Parameter estimation; Solid oxide fuel cells (Jurado, F. (154) 145)

Tank systems  
Hydrogen; Cryogenic; High pressure; Hydrides; Energy density (Eberle, U. (154) 456)

Temperature characteristics  
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## Temperature effects

Polymer electrolyte fuel cell; H<sub>2</sub>/CO<sub>2</sub> oxidation; Air bleed; Catalyst poisoning; Model studies (Behm, R.J. (154) 327)

## Test benches

PEM fuel cell; Dynamic modelling; Hardware in the loop; Simulation (Lemeš, Z. (154) 386)

## Test procedures

Ultracapacitors; Automotive applications; Automotive specifications; United States Advanced Battery Consortium (Ashtiani, C. (154) 561)

## Thermal behaviour

Renewable energies; Storage technologies (Perrin, M. (154) 545)

## Thermal cycling

Solid oxide fuel cells; Dynamic behaviour; Cathode activation; Degradation (Molinelli, M. (154) 394)

## Thermal management

SOFC; Start-up (Apfel, H. (154) 370)

## Transfer function

DMFC; System analysis; Reduced model; Transient response; Dynamic operation (Krewer, U. (154) 153)

## Transient response

DMFC; System analysis; Transfer function; Reduced model; Dynamic operation (Krewer, U. (154) 153)

## Tubular SOFC

Mechanistic modelling; Cathode-supported; Momentum transport; Heat/mass transport; Charge transport (Suwanwarangkul, R. (154) 74)

## Two-phase flow

PEM fuel cell; Gas diffusion layer; Visualization; Microscale; Hydrophobic porous media; Fibrous media (Litster, S. (154) 95)

## Ultracap modules

Ultracapacitors; Temperature characteristics; Frequency characteristics; Selfdischarge; Cell voltage balancing (Michel, H. (154) 556)

## Ultracapacitors

Ultracapacitors; Test procedures; Automotive applications; Automotive specifications; United States Advanced Battery Consortium (Ashtiani, C. (154) 561)

## Ultracapacitors

Ultracapacitors; Ultracap modules; Temperature characteristics; Frequency characteristics; Selfdischarge; Cell voltage balancing (Michel, H. (154) 556)

## United States Advanced Battery Consortium

Ultracapacitors; Test procedures; Automotive applications; Automotive specifications (Ashtiani, C. (154) 561)

## Visualization

PEM fuel cell; Gas diffusion layer; Two-phase flow; Microscale; Hydrophobic porous media; Fibrous media (Litster, S. (154) 95)

## 3.2 V plateau

Oxygen deficiency; Spinel; Structure around deficiency (Yoshio, M. (154) 273)

## VRLA

VRLA; High temperature; Low temperature; Idling stop (Ohmae, T. (154) 523)

## VRLA batteries

VRLA batteries; Cycling in state of partial charge; Balance hydrogen evolution and grid corrosion (Berndt, D. (154) 509)

## Water management

Air-breathing PEMFC; Planar PEMFC; Hydrophobic and hydrophilic diffusion layer; Geometry variation; Printed circuit board (PCB) (Schmitz, A. (154) 437)

## Water management

Water management; Proton exchange membrane; Pressure drop; Parallel serpentine channels; Air–water behaviour; CFD modeling (Jiao, K. (154) 124)

## Zn-polyaniline

Rechargeable bipolar battery; Carbon doped polyethylene (CDPE); Battery available capacity (BAC); ANN modeling; Simultaneous prediction (Karami, H. (154) 298)